Intelligent, reusable software for plug and play space avionics, Phase I

Completed Technology Project (2009 - 2009)

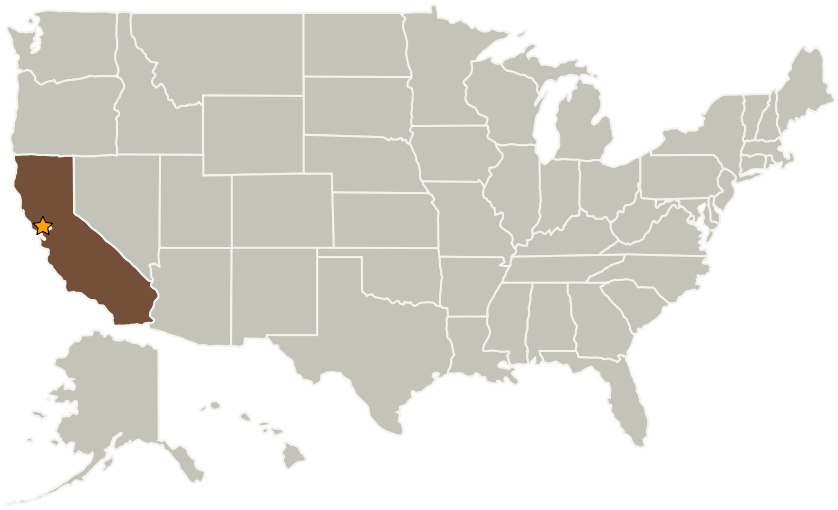
Project Introduction

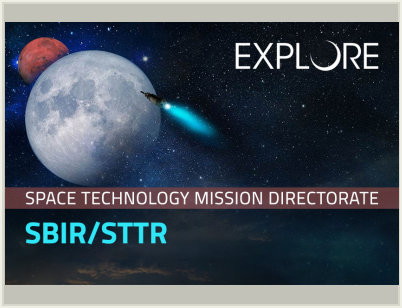
Space Micro proposes to build upon our existing space processing and hardening technologies and products e.g (Proton 200K), to research and develop reusable software for plug and play (PnP) for intelligent avionics and payload processing. This will leverage both AFRL and Space Micro R&D to meet NASA's expanding reusable software needs. At the end of Phase 1 we will have demonstrated, both by analysis and limited lab testing of prototype PnP software, the technical feasibility.(TRL=3). In Phase 2 we will develop an engineering models of an avionics incorporating PnP reusable software, and demonstrate electrically and also in relevant ground-based test bed at NASA or AFRL.

Anticipated Benefits

Potential NASA Commercial Applications: Intelligent reusable PnP software will support DoD AFRL and Operationally responsive Space (ORS) initiatives including the TacSat family of satellites. This technology may also benefit commercial space platforms, both LEO and GEO telecommunication satellites, such as Intelsat, Direct TV, XM radio, Lockheed's A2100, and Boeing's HS-601. Civil earth sensing applications such as weather/metrology applications e.g. (NOAA) can also benefit. This technology and products will also address emerging MDA radiation threats. These programs include MKV THAAD, AEGIS, and GMD for Blocks 2012 and beyond. With the new challenge of atmospheric neutrons to MDA High altitude airship (HAA) programs and NASA or Air Force UAV programs, this R&D will be a timely solution.

Primary U.S. Work Locations and Key Partners





Intelligent, reusable software for plug and play space avionics, Phase I

Table of Contents

Intelligent, reusable software for plug and play space avionics, Phase I

Completed Technology Project (2009 - 2009)

Organizations Performing Work	Role	Type	Location
★Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Space Micro, Inc.	Supporting Organization	Industry	San Diego, California

Primary U.S. Work Locations
California

Project Transitions

January 2009: Project Start

July 2009: Closed out

Closeout Summary: Intelligent, reusable software for plug and play space avionics, Phase I Project Image

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Project Manager:

Belgacem A Jaroux

Principal Investigators:

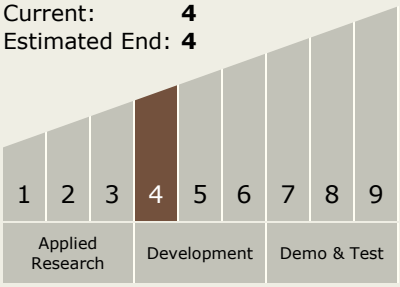
Dave J Strobel
David Strobel

Intelligent, reusable software for plug and play space avionics, Phase I

Completed Technology Project (2009 - 2009)

Technology Maturity (TRL)

Start: **4**
Current: **4**
Estimated End: **4**



Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.2 Extravehicular Activity Systems
    - TX06.2.3 Informatics and Decision Support Systems